



**Department of Energy**  
Washington, DC 20585

May 23, 2002

**MEMORANDUM FOR DISTRIBUTION**

**FROM:**

*Raymond J. Orbach*  
**RAYMOND J. ORBACH**  
**DIRECTOR**  
**OFFICE OF SCIENCE**

**SUBJECT:**

**Office Of Science Direction on Project Management**

The purpose of this memorandum is to set forth the Office Of Science (SC) expectations for the management of SC engineering and construction projects. This memorandum supplements Department of Energy (DOE) Order 413.3 and other departmental directives pertaining to the management of projects within the Department and Office of Science. The intent of this direction is to incorporate consistent project management practices that will ensure effective and efficient management at all levels.

The Office of Science expectation is that all projects be completed on schedule and within budget and meet the technical scope as reflected in formal project management documents. The Office of Science program and project management personnel will achieve this expectation through a system or method that complies with all of the project management requirements of applicable laws, regulations, orders, and directives, and meets the requirements discussed herein. This direction seeks to achieve the following objectives, which will:

1. Ensure that projects clearly support program research missions and strategic plans in a cost-effective manner,
2. Verify that projects are adequately defined and staffed before committing significant resources,
3. Establish a project baseline in terms of scope, schedule, and cost,
4. Maintain the project baseline through formal change control, and
5. Determine a project's success by measuring performance against the approved baseline.

The Acquisition Executive is the senior official who is responsible for achieving the above objectives and ensuring that this direction is implemented. The SC Associate Directors are accountable for the programmatic aspects of their projects (including funding), while the Field Site Office Managers are accountable for the execution of their projects. Both SC Associate Directors and Site Office Managers are responsible for ensuring that their projects meet all applicable requirements.

The SC Associate Director and the Site Office Manager shall ensure that a formal risk management approach shall be instituted at the time of Critical Decision (CD-1), Approve Preliminary Baseline Range, and used throughout the life of the project. Also, both shall verify that reports to senior management, such as the Department's Project Assessment Reporting System (PARS) report, are accurate and factual for the projects under their purview.

The SC Associate Director and Site Office Manager shall take the lead in establishing the expectation that all key project personnel hold regular formal and informal communications between Headquarters and Field

offices to facilitate the free and open discussion of the project's status and identified issues. Also, both shall ensure that adequate resources are provided to the Integrated Project Team during the front-end planning phase of each project.

The SC Associate Directors are expected to participate actively in Project Management meetings such as Critical Decisions approvals, ESAAB Equivalent Boards, and Quarterly Project Performance Reviews. Also, the Associate Directors and Site Office Managers are expected to lead the implementation of the solutions in the attached SC Project Management Improvements Committee report dated April 2002.

Lastly, the Headquarters Program Manager (designated by the Associate Director) and the Federal Project Manager (designated by the Site Office Manager) must have the training and experience commensurate to the size and complexity of the project. These personnel must also have the skills and ability to analyze performance, identify and promptly communicate evolving issues, and propose corrective actions.

If you have any questions regarding the intent or implementation of this direction, please contact Daniel Lehman, Director, Construction Management Support Division.

#### Attachment

cc:

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M. Johnson, SC-1  
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D. Lehman, SC-81

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*Department of Energy  
Office of Science*

# **PROJECT MANAGEMENT IMPROVEMENTS COMMITTEE REPORT**

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## **Committee Participants**

### **Headquarters**

James Carney, SC-81  
Daniel Lehman, SC-81  
Peter Rosen, SC-20  
Robin Staffing, SC-22  
Iran Thomas, SC-10

### **Field**

Lester Price, DOE/ORO  
Robert Wunderlich, DOE/ANL  
James Yeck, DOE/Fermilab

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**April 2002**

Office of Science  
Project Management Improvements Committee Report

PROBLEMS/SOLUTIONS/ACTIONS

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**I. PROBLEM:** There is no formal Office of Science Headquarters or Field project management "Lessons Learned" program.

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**SOLUTIONS:**

1. "Lessons Learned" guidance should be included on the Construction Management Support Division (CMSD) website and subdivided into two parts: 1) model documentation (Project Execution Plan, procedures, Acquisition Executive presentations, Critical Decision documentation, etc., and 2) summaries of lessons learned from on-going and completed projects (things that work/things that do not work).

*Action: CMSD to implement by July 2002.*

2. Project management workshops should be used to discuss lessons learned.

*Action: The Chicago Operations Office will host an Office of Science Project Management Workshop in October 2002 that will address Headquarters and Field "Lessons Learned."*

3. Each Office of Science (SC) site office should develop a project management/lessons learned database (things that work/things that do not work) with major factors. *An option is to transmit the site's lessons learned data to CMSD for posting on their web site.*

*Action: Site Managers to implement June 2002. Robert Wunderlich, Project Management Improvement Committee Member, addressed this action at the Site Manager Meeting on April 9, 2002.*

Same as CMSD web-site solution, but the structure should be improved to allow key word searches and additional subheadings.

*Action: Site Managers to implement by August 2002.*

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**II. PROBLEM:** Project management staffing (in Headquarters and the Field) are faced with the following staffing problems: 1) under-trained staff, 2) inexperienced staff, and 3) insufficient staff.

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**SOLUTIONS:**

4. Perform a staffing analysis of the existing DOE Headquarters Program Management staffs.

*Action: Staffing analysis will be conducted by the SC Associate Directors, and provided to Milt Johnson by April 19, 2002.*

5. Train Headquarters program managers: 1) to be very knowledgeable of DOE Order 413, 2) how to prepare required documents and to expedite approvals, and 3) to understand the DOE, OMB, and Congressional budget processes and anticipate the information needed for the budget.

*Action: The Office of Science will utilize the OECM project management training program scheduled to be available December 2002.*

6. The authority and responsibility of the SC program office (for managing each project) must be exercised at all times. The program office must also anticipate and quickly deal with problems during the life of the project.

*Action: SC Associate Directors are to take an active role in project management and attend all ESAAB Boards and Quarterly Project Performance Reviews. This will be reflected in a SC project management policy memorandum to be issued by June 2002.*

7. Establish a group of experienced construction program managers within the CMSD who would be assigned to projects as needed.

*Action: This concept was agreed upon by the ESC and Jim Decker. The Office of Resource Management will develop a draft plan by July 2002.*

8. SC senior management must act on providing program and project personnel when needed. The CMSD will only help if additional staff is hired. It is also important to have the right people. A project cannot be successful if the wrong people are involved; and because a project has a limited lifetime, it is very important to be able to change personnel quickly when someone is not contributing to the project.

Each site office shall: 1) review the draft OECM proposed training program and the existing Federal Project Managers should begin the proposed project management training through their IPDs; 2) identify new candidates who are interested in project management positions within their organization; and 3) support OECM in developing a certification process for DOE project managers and establishing target dates for obtaining project manager certification.

*Action: Robert Wunderlich, addressed this at the Site Manager Meeting on April 9, 2002. Site Managers to implement by December 2002.*

9. Each site office shall perform a DOE staffing analysis for all existing and new DOE projects to ensure adequate resources are dedicated to the project.

**Action:** *Robert Wunderlich, addressed this at the Site Manager Meeting on April 9, 2002. Site Managers to implement by [date TBD].*

10. Each site office shall: 1) develop a formal mentoring process for new project managers; 2) establish a group of experienced project managers and support staff that would be assigned to projects as needed and train their staff to determine which ones have the requisite personal skills and interest to become talented project managers; and 3) prepare a formal analysis of required project staff needed for existing projects, as well as each new project.

**Action:** *Site Managers and Federal Project Managers will conduct a staffing analysis for each new project at Critical Decision 1. John Yates, Director of SC's Infrastructure Division, will address this at the Site Manager Meeting on April 9, 2002.*

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**III. PROBLEM:** While early reporting of emerging problems is generally stressed as a basic value in SC projects, discipline and process could be strengthened.

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**SOLUTIONS:**

11. Field Quarterly Project Performance Reports shall address input from the DOE Project Assessment and Reporting System (PARS).

**Action:** *This policy was issued by CMSD in an e-mail dated April 2, 2002. Federal Project Managers to implement during next quarter's Project Performance Reviews.*

12. SC senior management shall establish the expectation that all projects hold regular, informal communications between Headquarters and Field to facilitate the free and open discussion of project status and issues.

SC senior management (Headquarters) should reinforce with their program managers that action must be taken quickly when problems arise. The laboratories should not go around the chain of command.

**Action:** *The policy aspects of the solutions will be incorporated in an SC project management policy memorandum to be issued by June 2002.*



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**IV. PROBLEM:** Front end planning, include technical scope, cost, schedule, and management has not been adequate. Insufficient resources have been dedicated to the development of the conceptual design report. There is a perception that risk management will eliminate the project risks and guarantee project success. There is also an emphasis on ensuring that the level of contingency is not more than actually needed. Project Management involves managing the risks; it does not guarantee success.

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**SOLUTIONS:**

13. Additional effort is needed in the development of conceptual designs to include independent reviews by CMSD.

*Action: SC Headquarters' Program Offices to implement immediately. Conceptual Design Reviews should be scheduled with CMSD for projects \$20 million and greater.*

14. A risk assessment (for all projects) should be completed by the Integrated Project Team prior to baseline approval and these assessments should be re-visited prior to construction start.

*Action: SC Associate Directors and Federal Project Managers to implement during all future Critical Decisions.*

15. The CMSD review process should be modified to include a specific discussion of risk in the management section of the report.

*Action: All future CMSD reviews and reports will address risk beginning May 2002.*

16. Both the mandated "External Reviews" and CMSD independent reviews should focus on risk management to identify the level of risk associated with the project baseline.

*Action: SC Associate Directors and CMSD to implement by April 2002.*

17. SC should require the use of formal risk management techniques throughout the life of a project. The project risk analysis should be revised as the project progresses to identify any new significant risks.

Early in the life of a project, the Integrated Project Team (Headquarters/Field/Contractors) should conduct a formal meeting for evaluating and discussing project risk factors and potential mitigation techniques.

For the conceptual design stage, the use of PED funding should ensure the adequate quality of the design and the associated use of risk management techniques in the development and approval of the project baseline.

*Action: SC management to implement by April 30, 2002. The policy aspects of this solution will be incorporated in a SC project management policy memorandum to be issued by June 2002.*



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**V. PROBLEM:** The current CMSD independent reviews typically provide a broad-based management and technical review of project status. However, the current practice could be strengthened with additional in-depth reviews of project cost and schedule estimates. SC reviews should take into account other reviews, such as the EIRs.

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**SOLUTIONS:**

18. Strengthen CMSD independent review procedures to hold ad hoc project reviews that focus only on cost/schedule for all projects over \$50 million.

SC program offices should study other review reports, i.e., EIR's for possible items to be included in the CMSD review charge letter

*Action: CMSD, SC Associate Directors, and Federal Project Managers to jointly implement by May 2002. At the conclusion of each CMSD project review, it will be determined if an ad hoc cost/schedule review is needed. In the future, the EIR will be reviewed for items to be included in CMSD charge letters.*

19. Establish and develop a SC cadre of cost/schedule experts.

*Action: Robert Wunderlich, addressed this at the Site Manager Meeting on April 9, 2002. CMSD will develop a cost and schedule database of experts by June 2002.*

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**VI. PROBLEM:** SC accountability for project success needs more emphasis and SC expectations to build to cost or scope needs to be stated clearly in the Project Execution Plans.

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**SOLUTIONS:**

20. SC senior management make a greater commitment to continuous improvement in project management by more actively participating in Critical Decisions, ESAAB Boards, Quarterly Reviews, etc.

*Action: Associate Directors and Site Managers are expected to participate in future project management actions. The policy aspects of this solution will be incorporated in a SC project management policy memorandum to be issued by June 2002.*

21. The CMSD and each program office should ensure that accountability/responsibility and expectations of scope and cost are clearly stated in each project preliminary PEP.

*Action: SC Associate Directors to implement for new projects by May 2002. CMSD will review each preliminary Project Execution Plan for project greater than \$20 million prior to approval by Acquisition Executive.*

22. The Headquarters program offices and the Field Offices should establish performance standards for their project and program management personnel that reflect the success of the program or project, commensurate with their authority and responsibility.

***Action: Guidance to be drafted by Daniel Lehman/Jim Turi by June 2002. The project management policy memorandum will give guidance on implementation.***